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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 10
1200 Sixth Avenue
Seattle, Washington 98101

15 September 1999

MEMORANDUM

SUBJECT: Review of *Draft Tidal Study for Rhone-Poulenc Marginal Way Facility, Tukwila, Washington*, dated August 20, 1999

FROM: Rene Fuentes, Hydrogeologist
Office of Environmental Assessment

TO: Christy Brown, Project Manager
RCRA Compliance

I have reviewed the third version of the *Draft Tidal Study for Rhone-Poulenc* as you requested, and have the following comments for your consideration.

General Comments

The document meets most of the requirement of the EPA March 3, 1999 letter. One of the main problems remaining is related to the lack of a pump test, and therefore the lack of field data to calculate a storage coefficient. As I stated in my April 19, 1999 memo which reviewed the first draft of this tidal study -- "The lack of data analysis presentation in the report can be corrected for the final report, but the lack of the pump test will not be able to be corrected since it has not been done. I do believe that AGI can use the newly analyzed tidal data and present a reasonable estimate on a value, or range of values, of storage coefficient values which EPA can accept." However, the three versions of the tidal report have continued to use very low values of storage coefficient, half of what would have been the lowest value available from the literature, and therefore, the time of travel values may still be unrealistically high based on such calculations.

With the proposed changes discussed below I believe that the Tidal Study is acceptable as final.

Specific Comments

Page 9, Storage Coefficient Section. This continues to be one of the weakest parts of the analysis in that a pump test has not been done, and therefore there is no way to directly measure Storage Coefficient. There continues to be a potentially major weakness in the calculations in this section, where an acceptable range of storage coefficients values of 0.01 to 0.3 are quoted from the literature.

The values presented in Tables 3.3 and 3.4 have a value of 0.005, based on a partially confined upper aquifer statement from the RFI, not on any new data. Since the original travel estimates provided in the first draft of the Tidal Study (March 22, 1999) have dropped from the 22 years originally calculated, to a range of 1.18 to 12.8 years in this report (depending on which method of calculation is used), the additional refinement of the calculation without actual site data probably does not serve to improve the purpose of this tidal study. However, the final report should state that based on the lack of data the values with the storage coefficient of 0.01 are the most reasonable to use in future calculations due to the lack of specific site data. The RFI states that the "Upper Aquifer consists of alluvial sands and silty sands deposited by the Duwamish River prior to dredging. The Upper Aquifer is generally unconfined but may be locally confined or semi-confined ..." . Based on this statement, I do not object to Tables 3.3 and 3.4 including the value of 0.005 in the sensitivity calculations.

However, in the footnotes and the text the statements that the 0.005 value is representative should be changed to 0.01 as a representative value. Since there is still no on-site pumping data, or significant additional characterization beyond the RFI, there is little evidence to support a value which is one half of the lowest in the literature suggested range.